(6) *Height of Bridge Wall.*—Considered with reference to the velocity of the gases over the bridge wall, it is theoretically possible to decrease this velocity over the hearth by increasing the thickness of the stream of flowing gases by one-half their thickness over the bridge wall.[1] As it is necessary that the velocity should not be too great over the hearth, the roof will be given a downward slope and the height of the bridge wall will be fixed at not more than one-half the height of the opening over the bridge wall. In the construction of the bridge wall this proportion will be reduced to one-third (140 mm), and the roof will be given a downward slope of the same amount toward the exit port for the gases; a general longitudinal outline of the furnace will, therefore, appear as in Fig. 44.

The working chamber will be supplied with two working doors,

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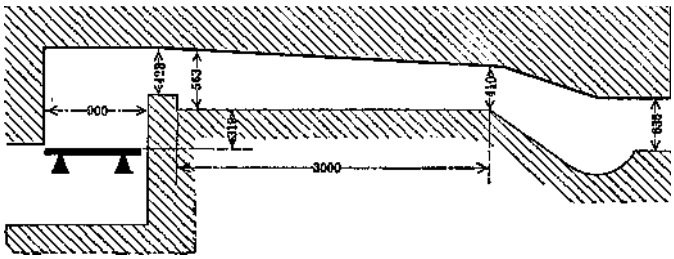

FIG. 44.

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each having a clear opening 400 mm in height. The hearth will be given a slight grade or slope toward the gas-exit port, in order to permit the cinder deposited upon the bottom to drain off into the cinder pocket in the flue. The waste gas flue will be dropped below the level of the hearth, giving any cold air or gases which may enter the working chamber a chance to drain out of the chamber. With the usual construction, it is impossible to prevent small amounts of cold air from entering the furnace below the doors.

(c) *Dimensions of Grate.*—These will be based upon the assumption that 75 kg of coal can be burned per square meter per hour (p. 75) (chimney draft):

= 1 m^2 72 or approximately 2 m 0X0 m 90.

^ According to Yesmann *h* =•§//.